

What Is Claimed Is:

1. An interferometric measuring device for measuring surface characteristics, shapes, distances, distance variations, and vibrations, comprising:

a probe part;
an optical fiber;
a measuring head, wherein:

in the measuring head, at a free end of the probe part approaching a measuring object, the optical fiber projects out and corresponds to a measuring fiber for illuminating a point of measurement and for picking up a measuring light coming from the point of measurement.

2. The measuring device according to claim 1, wherein:

the surface characteristics, shapes, distances, distance variations, and vibrations are measured in narrow, hollow spaces, of the measuring object.

3. The measuring device according to claim 1, wherein:

a free end region of the measuring fiber illuminates the point of measurement and picks up the measuring light in dependence upon a measuring task.

4. The measuring device according to claim 3, wherein:

the free end region is one of polished, provided with a diaphragm, configured as one of a lens and a prism, treated against disturbing reflected light, beveled, reflection-coated, antireflection-coated, and provided with a combination of being polished, provided with the diaphragm, configured as one of the lens and the prism, treated against disturbing reflected light, beveled, reflection-coated, and antireflection-coated.

5. The measuring device according to claim 4, wherein:

in order to achieve one of a beam shaping and a beam guidance, the free end region is at least one of provided with a drop of adhesive and roughened.

6. The measuring device according to claim 1, wherein:

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a fiber beam splitter, wherein:

light from the short-coherent light source is channeled via the additional optical fiber and the fiber beam splitter into the fiber section and, once the point of measurement is illuminated, out of the fiber section into the optical fiber.

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The measuring device according to claim 1, wherein:

the probe part includes:

a fixed probe part, and

another probe part, rotationally mounted therein, that is rotatable with the measuring head.

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